Remarks

After amendment, claims 1-9, 12-17 and 21-22 remain pending in the present application. Claims 10-11, and 18-20 are cancelled *without prejudice* pursuant to the Examiner's restriction requirement and Applicants' election. Support for the amendment to the claims can be found throughout the originally filed specification and claims and in particular, at page 3 and page 20, first full paragraph. It is respectfully submitted that the instant amendment places the present application in condition for allowance. No new matter has been added by way of the presentation of this amendment. The claims have been amended to obviate minor concerns related to claim form.

Applicants wish to bring to the attention of the Examiner patent application serial number 10/578,974, filed May 11, 2006, which is a CIP application of the present application and a §371 of PCT/US04/37015, filed November 8, 2004. Applicants have attached an information disclosure statement reflecting this information in a more formal form.

The Examiner has rejected originally filed claims 1-9 and 12-17 under 35 U.S.C. §103 as being obvious over U.S. patent no. 4,079,028 ("Emmons") and U.S. patent no. 6,106,578 ("Jones") for the reasons which are stated in the office action on pages 4-8. Applicants respectfully traverse the Examiner's rejection for the reasons which are set forth hereinbelow and respectfully submit that the instant claims are patentable over the art cited by the Examiner.

The Examiner has rejected original claims 1-9 and 12-17 as being obvious over Emmons and Jones for the reasons which are stated in the office action. Essentially, the Examiner cites Emmons for teaching a number of polymeric high molecular weight thickeners which are characterized by hydrolytic stability, versatility and efficiency and which may be

applied widely to a variety of aqueous systems containing the thickeners, including personal care compositions. Jones is cited for teaching a method of thickening a hair dye composition comprising at least one polyethoxylated urethane compound. Based upon the disclosures of Emmons and Jones, it is the Examiner's position that the presently claimed invention is obvious over one or more of Emmons and Jones. Applicants respectfully traverse the Examiner's rejection.

The present invention relates to personal care products as claimed which comprise a fattypoly(ethoxylated) dimeric urethane *with the chemical structure* as claimed. The dimeric urethane compositions according to the present invention are based upon the finding that end-capping one end of a poly(ethoxylated) chain of a certain length with a fatty group (ether linkage) as claimed and then reacting the distil free hydroxyl end of the poly(ethoxylated) material with isophorone diisocyanate, produces unique compositions. These compositions, when included in personal care products, provide consistent thickening to formulations over a wide range of pH, with exceptional viscosity control, solubility/compatibility with aqueous solutions and which do not depress the foaming of surfactants in the claimed compositions. It is respectfully submitted that the present compositions are neither disclosed, nor suggested by the art of record.

Emmons discloses a *huge number* of polymeric materials, ***none*** of which is identical to the present compositions. In the present invention, a poly(ethoxylated) material of a certain number of (about 50 to 120) ethoxy units as claimed is end-capped with a fatty group (long chain alkyl or alkenyl group) and the end-capped poly(ethoxylated) polymeric material is then reacted with isophorone diisocyanate to produce the dimeric urethane compositions as set forth in the claims.

Emmons discloses a huge number of compositions which are said to be useful as

thickeners, primarily in latex paint compositions. Latex paint and other compositions which are disclosed by Emmons are decidedly different than the personal care compositions of the present invention. Contrary to the Examiner's contention, Emmons does not disclose the compositions which are described therein as being useful for inclusion in personal care products, as presently claimed. In reviewing the compositions of Emmons, there is no disclosure of a composition which provides a diurethane composition according to the present invention. There is no composition in Emmons which has an end-capped fatty group linked to a poly(ethoxylated) chain which is then further reacted with isophorone diisocyanate. For example, in reviewing the generic-type chemical compositions of Emmons, and in particular, the disclosed species which are described and set forth in the examples of Emmons, we see that none of the described compositions is the same or even descriptively similar to the present invention.

The compositions of Emmons which are closest to those of the present invention can be found in examples 1-102, but these are decidedly distinguishable from the compositions of the present invention and do not provide the same chemistry as the present invention. Indeed, in reviewing Emmons, it is noteworthy that the ethyleneoxide groups are end-capped with isocyanates, not fatty (alkyl or alkenyl) groups as in the present invention. This is an important distinction inasmuch as this chemistry for the present invention provides a degree of stability which is not available in the compositions of Emmons. Given that the distil end of the polyethyleneoxide group in the present invention is bound to the fatty (alkyl or alkenyl group) through an ether linkage, rather than a urethane linkage as described by Emmons, this distinguishes over the disclosure of Emmons and provides for greater stability of the final diurethane compositions of the present invention. This is the basis, at least in part, for the exceptional viscosity control of the present invention because the present compositions are consistent in manufacture as well as other distinguishable characteristics of the present invention. In addition, the present compositions are stable over a broad pH range, due to the

chemistry used to provide the instant compositions. Moreover, in the case of the Emmons chemistry, in formulating that chemistry, the likelihood of a trans-carbamylation reaction (i.e., where a free hydroxyl group reacts and displaces a group on a urethane moiety) is far greater than in the present invention which has a very stable ether group at the distil end of the poly(ethylene)oxide chains and does not/cannot undergo trans-carbamylation reactions at the distil end of the polyethylene oxide chain as in the case of Emmons. In addition, Emmons does not disclose or suggest the length of ethylene oxide chain used in the present invention, which instills favorable chemical characteristics, including the ability to avoid depression of foam in surfactant containing personal care products. Quite clearly, Emmons does not disclose or suggest the present invention and is a completely deficient reference.

Note that the Examiner relies on Examples 280 and 281 of Emmons in making her rejection of the present invention. Applicants note that examples 280 and 281 disclose the use of polybranched polymers (from Example 157 and labeled "complex polymers") which are not descriptive of the present invention and are completely unrelated to the present compositions. Example 157 of Emmons is based upon the use of a triol (trimethylol propane)-PEG adduct, a monoalcohol and a diisocyanate to produce branched/crosslinked compounds which, as described above, are unlike the presently claimed diurethane thickeners. In addition to the large difference in molecular weight which are produced by the chemical components of Example 157, these compositions are difficult to control by way of molecular weight given the complexity of the chemistry upon which these compositions are based. They are very much unlike the present compositions which have a defined molecular weight given the fact that the compounds are diurethanes, not crosslinked polyurethanes as disclosed by Emmons. In stark contast to the teachings of Emmons, the present polymers are diurethane compounds with the particular structure as claimed which comprise fatty endcapped PEG groups which have been reacted with isophorone diisocyanate. The present compositions are well defined and the chemistry is easily controlled, resulting in diurethane (i.e., ***not polymeric)*** thickeners which

have favorable attributes as otherwise disclosed herein.

Turning to Jones, this reference describes a number of polyethyleneoxide polyurethanes for use as thickeners in numerous personal care products including hair care (hair dye) compositions. Jones basically discloses in a more detailed manner that the compositions which are disclosed by Emmons can be used in hair care compositions, in particular hair dye compositions. Jones is no more detailed than is Emmons and like Emmons, completely fails to teach the specific compositions according to the present invention which exhibit chemical characteristics consistent with their superior use in personal care products.

Note that the chemistry of Jones is decidedly different than the present invention, inasmuch as the generic chemistry is unlike the presently claimed invention and the preferred polyurethanes of Jones (see column 6, lines 44-50) are directed to compositions wherein a "monofunctional active hydrogen compound" (i.e., not a polyethylene oxide component) caps the diisocyanate at one or more ends of the diisocyanate. This is decidedly ***not*** the present invention inasmuch as the present invention first forms a fatty end-capped polyoxyethylene intermediate which is then reacted with a diisocyanate to produce a chemical composition with a controlled, defined chemistry. In Jones, the use of trifunctional agents and other agents not similar to the present invention results in a decidedly different and more complex chemistry exhibiting different chemical qualities. In the present invention, the diurethane thickener compositions are provided with a defined chemistry because of the favorable chemical characteristics those compositions will instill in producing personal care compositions.

Inasmuch as Jones or Emmons does not disclose or suggest the specific compositions which are claimed, which exhibit favorable characteristics including exceptional viscosity control and stability over a broad pH range as well as avoiding foam depression, it is respectfully submitted that the present compositions are patentable over the compositions of Jones. Note that Jones does not provide motivation to produce the particular compounds of the present invention,

does not suggest the use of an isophorone diisocyanate *at all*, does not disclose or suggest the length of polyethylene oxide chains which Applicants have found to be particularly advantageous in thickening personal care products containing a surfactant, does not disclose an ether linkage between the polyethylene oxide chain and the fatty (alkyl or alkenyl) group, and does not suggest the particular chemistry which Applicants have discovered is particularly useful in personal care products which include surfactants because of the chemical characteristics these compositions instill in personal care products containing surfactants, it is respectfully submitted that the instant claims are clearly non-obvious over the disclosures of Emmons and Jones. Instead, Jones simply discloses literally millions of compounds, *none* of which is even remotely like the presently claimed compositions.

There is simply no disclosure in Emmons or Jones of the presently claimed chemisty, and no motivation to provide the compositions which are used in personal care products according to the present invention. It is the combination of an isophorone diisocyanate group, along with fatty end-capped polyethylene oxide chains of claimed length in a surfactant containing personal care product which is the present invention. The present invention is neither disclosed nor suggested by any of the teachings of Emmons and/or Jones.

It is respectfully submitted that the references which are cited against the present invention do not disclose or even obliquely suggest the compositions of the present invention given the specific chemistry claimed, the failure of the art to disclose the isocyanate used in the present invention, the failure of the art to disclose the specifically identified polymeric chemical structure used in the present invention (a fatty end-capped polyethylene glycol group of a limited range of polymer length ethylene oxide monomers) which produces the specific polymeric structure which is neither disclosed nor suggested by Jones or Emmons, or the length or type of polyethylene oxide which Applicants view as critical to their invention, it cannot be cogently argued that the present invention is unpatentable and obvious over the teachings of Jones or Emmons. It is respectfully submitted that the combination of several prior art references, none

of which disclose or suggest the *generic* polymeric chemistry used in the present invention and none of which disclose either the diisocyanate compound used or the fatty endcapped polyethylene glycol intermediates used simply do not make out a cogent argument that the present invention is obvious. Given that Applicants have posited their particular chemistry as providing certain features in personal care products which are not taught by the art and not met by the art, it is respectfully submitted that the present invention is patentable over the cited prior art.

For the above reasons, Applicants respectfully assert that the claims set forth in the amendment to the application of the present invention are now in compliance with 35 U.S.C. Applicants respectfully submit that the present application is now in condition for allowance and such action is earnestly solicited.

Applicants have neither cancelled nor added any claims in this amendment. No fee is therefore due for the presentation of this amendment. A petition for an extension of time is enclosed as is the requisite fee ($60) as is a notice of appeal and fee. Please charge any additional fee due or credit any overpayment to Deposit Account No. 04-0838.

Respectfully submitted,

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